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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/816,736

04/01/2004

Tsukasa Inoguchi

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EXAMINER

TRAN, THIEN F

ART UNIT

PAPER NUMBER

2811

MAIL DATE

DELIVERY MODE

05/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,736	Applicant(s) INOUCHI, TSUKASA	
	Examiner Thien F. Tran	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 and 40 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 6-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/25/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/25/2008 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 4 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Cao (US 2005/0174801).

Cao discloses a light-emitting apparatus package (Fig. 3b), comprising: a ceramic substrate 353 having an electric insulating property and a good heat conductivity; a first concave section 354 recessed in a thickness direction of the ceramic substrate, the first concave section providing a light exit aperture on a first surface of the ceramic substrate; a second concave section 355, provided in the first concave section,

Art Unit: 2811

and further recessed in the thickness direction of the ceramic substrate, the second concave section for providing an area for mounting a light-emitting device 356 on a bottom surface of the second concave section; a wiring pattern (bonding pads on the chip 306, see Fig. 3a) provided in at least one of the first concave section and the second concave section, the wiring pattern for supplying electricity to the light emitting device; and a metalized layer, provided tightly on at least a part of the bottom surface of the second concave section in such a manner that the metalized layer is electrically insulated from the wiring pattern, the metalized layer having a light reflective property (see paragraph [0011]).

Regarding claim 4, the metalized layer is exposed within the second concave section.

Regarding claim 40, the ceramic substrate of Cao has the same material as claimed. Thus, the ceramic substrate 353 inherently has the same properties /characteristics as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 2004/0173808) in view of Chang et al. (US 7,030,423).

Wu discloses a light-emitting apparatus package (Fig. 3), comprising: a ceramic substrate 300 having an electric insulating property and a good heat conductivity; a first concave section 3021 recessed in a thickness direction of the ceramic substrate, the first concave section providing a light exit aperture on a first surface of the ceramic substrate; a second concave section 302, provided in the first concave section, and further recessed in the thickness direction of the ceramic substrate, the second concave section for providing an area for mounting a light-emitting device 304 on a bottom surface of the second concave section; a wiring pattern 308 provided in at least one of the first concave section and the second concave section, the wiring pattern for supplying electricity to the light-emitting device.

Wu fails to teach a metalized layer, provided in direct contact with at least a part of the bottom surface of the second concave section in such a manner that the metalized layer is electrically insulated from the wiring pattern, the metalized layer having a light reflective property.

Chang et al. discloses a metalized layer 118, provided in direct contact with at least a part of the bottom surface of a concave section in such a manner that the metalized layer is electrically insulated from a wiring pattern 116, the metalized layer having a light reflective property.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to incorporate a metalized layer of Chang in direct contact with at least a part of the bottom surface of the second concave section 302 in the device of Wu to enhance the reflectivity of lights and thereby improve light source efficiency. Wu

in view of Chang provides a metalized layer electrically insulated from a wiring pattern 308, the metalized layer having a light reflective property.

Regarding claim 4, the metalized layer is exposed within the second concave section.

Regarding claim 5, Wu in view of Chang discloses that the ceramic substrate contains sapphire or silicon carbide but does not disclose that the ceramic substrate contains aluminum nitride. However, silicon carbide, sapphire, and aluminum nitride are ceramic materials known in the art and routinely used to form ceramic substrate in semiconductor devices. Therefore, it would have been obvious to one of ordinary skill in the art to select any one of these materials as a suitable ceramic material for the ceramic substrate 300 in Wu, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. In re Leshin, 125 USPQ 416.

Regarding claim 40, the ceramic substrate of Wu in view of Chang has the same ceramic material as claimed. Thus, the ceramic substrate 300 inherently has the same properties/characteristics as claimed.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (US 2005/0174801).

Cao as described above does not disclose the ceramic substrate containing aluminum nitride. However, silicon carbide, sapphire and aluminum nitride are materials known in the art and routinely used to form substrate in semiconductor device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to select any one of these materials as a suitable ceramic material for the ceramic substrate 353 of Cao, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. In re Leshin, 125 USPQ 416.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F. Tran whose telephone number is (571) 272-1665. The examiner can normally be reached on 6:30AM - 3:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Gurley can be reached on (571) 272-1670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thien F Tran

Application/Control Number: 10/816,736
Art Unit: 2811

Page 7

Primary Examiner
Art Unit 2811

/Thien F Tran/
Primary Examiner, Art Unit 2811